

An Investigation into the Determinants of Women Farm Labour Participation in Mezam Division, NorthWest Region- Cameroon

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Abstract

Considering the importance women play in farm production, this paper seeks to investigate the determinants of women farm labour participation by large and by agricultural training in Mezam, Cameroon. Data was collected from 398 farmers using a structured questionnaire and was analyzed using descriptive statistics and Binary logistic regression. On average 70.1% of women were into farm labour participation and 29.4% received agricultural professional training. The mean number of women into farm labor participation is further revealed to be higher for those with training than those with no training. The logistic regression results indicate that marital status, land ownership, farm experience, agricultural training and land size all have a significant and positively associated with women farm labour participation while Household size exhibits a significant but negatively associated participation. Education, crop production, financial status and access to credit are all insignificant. When decomposed by agricultural training, household size, crop production, access to credit and land ownership are positive and significant in influencing the likelihood of women farm labour participation. This finding concludes that, improvements in agricultural training, credit facilities and women access to land can significantly improve women farm labour participation and may contribute positively to farm production Mezam Division. It is recommended that land reforms and laws should be in favour of female farmers to increase their access and ownership of land and female-agricultural training should be augmented.

Keywords: Women Farm Labour Participation, Farm Production, Agricultural Training, Binary Logistic Regression, Cameroon.

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1.1 Introduction

Over the years, women have actively participated in farm labour through planting, weeding, and post-harvesting and they contribute to about two-thirds of the work force in agriculture (Forgha and Mbella 2016). This has increased greatly in recent years causing women to contributing about 50% of the world's food production (Javaid et al., 2022). The underlying factors for this increase are not the same across regions. According to Badel et al., (2023), the average gender labour- participation gap in farms is on a decline since the 1990s. Women

labour farm participation has become a necessary element in the determination of the performance of economic development, both in developed and in developing countries Che and Sundjo (2018).

Despite the important role women play in agricultural production, literature reveals that much attention has not been given to them particularly in ownership or control of land, access to finance, market information, training and technology and policy inclusion as compare to their male counterparts (FAO, 2011). It is observed that inheritance rights especially in Africa and in Cameroon particularly

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favour males more, leaving women at a disadvantage (FAO, 2011). Owning land can make women to access capital which can enhance their farming activities. Studies have highlighted that women's participation in farming widely depends upon economic and demographic characteristics such as female earnings, male earnings, non-earnings income, schooling, age, and the number of children (Julius et al., 2025).

Previous studies, including Forgha and Mbella (2016) and Julius et al., (2025) report that women farm labour participation is significantly influenced by education, age, marital status, and household size and is widely perceived to be a key factor in closing gender gaps in agricultural productivity. When women are empowered, they can claim their rights and have access to land and this gives more leadership opportunities, and food supply can be enhanced (Michelle, 2017). Facts concerning what influence women farm labour participation in Cameroon remains scanty. It is for this reason that the paper seeks to explore the underlying reasons why women in Mezam participate in farm labour.

1.2 Literature Review

Nmadu and Akinola (2015), examined factors affecting farm labour supply and utilization for food crop production in Niger State, Nigeria. The study was conducted among 180 participants of the Fadama II programme in Agaie and Katcha Local Government Areas. Data were collected through structured interviews and analyzed using descriptive statistics alongside a two-stage least squares (2SLS) regression model. Results showed that family and hired labour were the major sources of supply, with household size, wage rate, farm size, gender, non-farm income, and agrochemical use significantly influencing labour input. Constraints included high wage rates, dwindling farm/family income, migration, and aging of labour suppliers, all of which reduced timely and adequate labour availability. The study recommended regulating farm wage rates and improving technology adoption to ensure timely farm operations and sustainable food crop production.

Forgha and Mbella (2016), investigated the determinants of female labour force participation in Cameroon and its impact on economic growth using time-series data from 1980 to 2014. The study employed a Generalized Method of Moments (GMM) estimation technique alongside a Vector Error Correction Model (VECM) to capture both short- and long-run dynamics. Results showed that dependency ratio, fertility rate, male labour force participation, and per capita income were significant determinants of female labour supply. The economic growth

model revealed opposite effects of male and female labour supply on growth, with female participation contributing positively while male participation showed a negative relationship during the study period. The authors concluded that social norms and structural barriers continue to limit women's full economic contribution. They recommended policies to change cultural attitudes, expand education and empowerment initiatives, and directly target female labour force participation as a driver of inclusive growth in Cameroon.

Che and Sundjo (2018), in their study investigated determinants of Female Labour Force Participation in Cameroon. Data was gotten from the 2011 Cameroon Demographic Health Survey collected by the National Institute of Statistics (NIS). They made use of both descriptive and inferential statistics. The data was analysis using the logit regression model to test the objectives. The findings of their study revealed that, the higher the level of education especially after the primary level, the lower the chances of women participating in the labour force market. This is evident in Cameroon where we find a majority of those with the basic level of education working in most of the service sectors, while those with higher certificates may not have a job because of the scarcity and the very high competition in the few available jobs. Given these results, they recommended that policy makers should try to understand women's decision to supply labour in the labour market as well as the factors that enable them to either participate or not in the job market.

Julius et al., (2025), studied women's participation in Kenya. They employed both quantitative and qualitative technique. Primary data was collected using structured and semi structured interview schedules, complemented by focus group discussions and key informant interviews. A multistage random sampling method was employed to select 215 respondents, comprising 140 women participants and 75 non-participants. The data was analyzed using a Binary probit model. The findings of their study revealed that farming experience, access to credit, farm size, extension visits, land tenure rights, distance from the nearest market, and hired labour costs per man-day all had a significant relationship with women's level of participation in farming activities. The study therefore concluded that improving access to credit facilities, strengthening agricultural extension services, enhancing women's land ownership rights, and reducing barriers to market access could substantially increase women's participation in farming.

1.3 Methodology

1.3.1 Study Area

The study was carried out in Mezam Division located in the Northwest Region of Cameroon. This division is one of the seven divisions of the region covering an estimated total surface area of 1745

km² and population of over 904,127 inhabitants. Located between latitudes 5°40' and 7°50' North and longitudes 9°80' and 11°51' East, it consists of seven subdivisions which include Bamenda 1, Bamenda 2, Bamenda 3, Bafut, Bali, Santa, and Tubah Subdivisions.

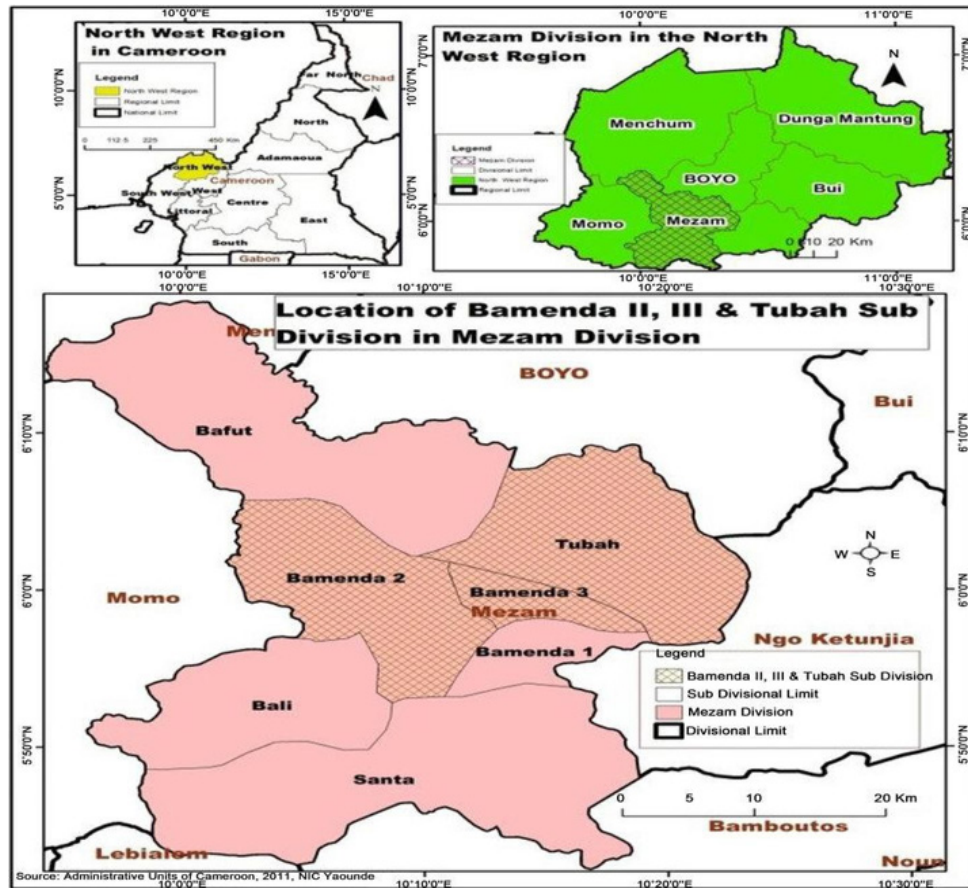


Fig.1 The Map of Cameroon and North West Region showing Mezam Division.
Source: World Research Institute, (2019)

1.3.2 Data collection, sampling procedure and study model.

This study used primary data collected from the 398 farmers in Mezam. We used both clustered and random sampling technique. Farmers were first clustered at sub-divisional levels and villages, and households with farmers randomly selected from the villages. Following the estimated number of farmers obtained from the regional delegation of Agriculture in the Northwest, the Yamene Formula guided us to have 398 farmers to work with. Data were collected using a self-administered questionnaire. Before the main data collection, a pre-test was conducted on 10 farmers and reliability test of items was assessed.

Following the U-shaped theory of Goldin (1994), women labour participation turns to rise as technology increases, education improves, fertility

declines and substation effect strengthens. It is therefore expected that women labour participation should be on the rise as indicated by this theory since the conditions for the rising part of the theory are into play over time in Cameroon. Mezam division where the study is carried out is a cosmopolitan city that is fast developing. Hence, women in this area can be seen involved in farm labour participation depending on some factors. In this paper the decision to participate in farm labour by a woman is captured as binary (1 = participates; 0 = otherwise) outcome. The paper adopts a binary logistic model to analyse the factors affecting the probability of a woman participating in farm labour. Since there is no assumption with regards to how the predictor variables are distributed, the logistic regression is considered to be relatively flexible, easy to use and interpret. There is no

assumptions of linearity and heteroscedasticity. The model can be expressed in equation (1):

$$WA_i = Z(Y_i) = 1/1 + e^{-(\alpha + \sum \beta_i X_i)} \quad (1)$$

WA_i is the probability of women farm-labour participation, Y_i stands for the i th explanatory variables, α and β_i are the parameters to be estimated and e is the base of the natural logarithm. This equation can further be empirically specified in a log odds form as in equation (2):

$$\frac{Y_i}{1-Y_i} = e^Z \quad (2)$$

$1-Y_i$ is the probability of women not being into farm-labour participation. Taking the natural log of this equation gives:

$$\ln\left(\frac{Y_i}{1-Y_i}\right) = Z_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon_i \quad (3)$$

Where ε_i is the error term that is randomly distributed, X_1 , X_2 , and X_n are the explanatory variables while β_1 , β_2 and β_n are parameters to be estimated. Specifically, in this paper WA_i stands for the women farm labour participation (dependent variable), X_1 - X_n determinants of women labour participation (independent variables) while β_1 - β_n are the parameters to be estimated and ε_i the error term.

1.4 Results and Discussion

1.4.1 Descriptive Statistics of Study Variables

The selected variables for the study were summarized and presented in Table.1. Results demonstrated that 70.1% of women in Mezam participated in farm labour. This indicates a high observed level of farm labour participation in Mezam. This is in line with previous studies that have reported that women are more into farming than men (Oyelana et al., 2017 and Njuguna et al., 2015). Mezam Division is one of the major divisions in Cameroon and economic activities are relatively high with a fast-growing population that need much food. It is therefore no doubt to see that most women in this area participate in farming. The mean number of farmers who were married scored 63.1% and as seen by other authors, marital status can positively increase the chances of women involvement in farming. Married women have many mouths to feed that causes them to indulge in farming more than when they are single. Results further reveal that

19.1% were classified as rich according to the study's financial status.

The mean family size is 51.8% (1-10 persons) and indicates that households can readily have available farm labour that can be derived from the family. Authors like (Nmadu and Akinola, 2015) asserted that households utilize family labour as a way out to meet high labour demand. Family labour helps the household to reduce the production cost on hired labour. Results demonstrate that overall, only 29.4% of farmers had received professional training on agriculture. This implies that agricultural training was not prioritised in the area of study.

Concerning experience in agriculture 32.7% of the farmers had been into farming for a min of 5 years and maximum of 10 years. The sampled population is therefore those who actually know much about farming in the area are most likely to give information that is more reliable.

Crop production is revealed to be a major share of the farming activities of the households contacted scoring 79.9% and 26.6% owned land. The mean farm size used of 0.357 hectares is reflective of the national average hectares of farm size (1 hectare) owned by small farm holders in Cameroon (FAO, 2015). This means most households own small parcels of land, thus agriculture is most likely to be subsistence as is the case for most African countries. Most of the farmers did not access credit which is a major and common characteristic amongst farmers of the less developed world. On over all, the instruments used to capture the variables are good as the Cronbach alpha test is 60%.

1.4.2 Comparison between Farmers with Agricultural Training and Non-Agricultural Training Characteristics

The selected variables were stratified on basis of agricultural training status as presented in Table 1. statistics show that majority of the women who are into farm labour Participation was 79.5% among respondents with agricultural training compared to 66.2% among those with no agricultural training. Conversely those who were married had more training with 64.1% than the unmarried. In terms of education, 35% of those with secondary education had training and 36.7% did not have. Those whose harvest yielded them above the threshold of 150.000frs with 30.8% were classified as rich had agricultural training. This could be because they are able to afford for the training costs. Also, 56.4% of households with large family size were trained in agriculture while 49.8% of those who had long stayed in farming had no agricultural

training. Those with 42.7% of farming experience had agricultural training while 28.5% had no agricultural training. Our results also demonstrate that 82.2 of those into crop farming or crop production did not receive training in agriculture. This means their farming methods may be highly subsistence. Amongst the landowners, 35.9% had received agricultural

training while 22.8% did not receive training. 36.8% of land-use-size had training while 35.2% did not. Finally, 27.4% of those who received credit access had training in agriculture which ties with the reasoning that access to credit is a vital determinant of farmer's performance while 16.6% had no agricultural training.

Table.1. Summary Descriptive Results of Variables Used in the Study

Variable	Full sample		Agricultural Training		No Agricultural Training		Cronb ach Alpha
	Mean	Std. D	Mean	Std. D	Mean	Std. D	
Women farm-labour participation (1=yes, 0 otherwise)	0.701	0.458	0.795	0.406	0.662	0.474	0.372
Marital status (1=yes, 0 otherwise)	0.631	0.483	0.641	0.482	0.626	0.485	0.586
Education (1=secondary, 0 otherwise)	0.362	0.481	0.350	0.479	0.367	0.483	0.620
Financial Situation (1=rich, 0 otherwise)	0.191	0.394	0.308	0.464	0.142	0.350	0.602
Household Size (1=10 persons per house, 0 otherwise)	0.518	0.500	0.564	0.498	0.498	0.501	0.639
Profession Training (1=yes, 0 otherwise)	0.294	0.456	1	0	0	0	0.551
Experience in Agriculture (1=5 to 10 years, 0 otherwise)	0.327	0.470	0.427	0.497	0.285	0.452	0.574
Crop production (1=yes, 0 otherwise)	0.799	0.401	0.744	0.439	0.822	0.383	0.600
Own land (1=yes, 0 otherwise)	0.266	0.443	0.359	0.482	0.228	0.420	0.604
Land Use Size (1=2 to 4 hectares, 0 otherwise)	0.357	0.480	0.368	0.484	0.352	0.479	0.588
Access to credit (1=yes, 0 otherwise)	0.196	0.397	0.274	0.448	0.164	0.371	0.603
Observation/Test Scale	398		117		281		0.601

Source: Author (2026).

1.4.3 Factors Affecting Women's Farm-Labour Participation by Full Sample Size.

The results of the binary logistic regression on factors affecting women labour participation are presented on Table 2. The beta coefficient of the predictors was jointly significantly different from

zero as indicated by the statistics (Chi²= 39.82; p=0.0000). Hence, the null hypothesis that beta coefficients of the predictor variables are jointly insignificant from zero was rejected.

Table.2. The Logistic Estimates of Factors Influencing Women Farm-Labour Participation in Mezam Division

Variable	Full sample		
	Coef	Std. Err.	Z
Marital status (1=yes, 0 otherwise)	0.448*	0.237	1.89
Education (1=secondary, 0 otherwise)	0.089	0.253	0.35
Financial Situation (1=rich, 0 otherwise)	-0.372	0.302	-1.23
Household Size (1=10 persons per house, 0 otherwise)	-0.660*	0.268	-2.46
Professional training (1=yes,0 otherwise)	0.632*	0.284	2.22
Experience in Agriculture (1=5 to 10 years, 0 otherwise)	0.892 **	0.315	2.83
Crop production (1=yes, 0 otherwise)	0.002	0.292	0.01
Own land (1=yes, 0 otherwise)	1.018**	0.309	3.29
Land Use Size (1=2 to 4 hectares, 0 otherwise)	0.653*	0.274	2.39
Access to credit (1=yes, 0 otherwise)	-0.181	0.297	-0.61
Constant	0.248	0.362	0.68
Observations		398	
LR chi2(10)		39.82	
Prob > chi2		0.0000	
Log likelihood		-222.87635	
Pseudo R2		0.0820	

Source: Author (2026). Notes; *, **, ***, represent 10%, 5%, and 1% level of significance.

Marital status had a positive and statistically significant effect on women farm labour participation at 10% level. The 0.448 coefficient associated with marital status implies that a female farmer that is married increases the likelihood of the woman to participate in farm labour. The variable education is revealed to have a positive but statistically insignificant with the coefficient of 0.089% effect on the probability of women farm labour participation. Specifically, having secondary education can increase the probability of women farm participation as farming is a main source of employment to them. Previous studies like those of [Khonje et al., \(2015\)](#) and [Wongnaa et al., \(2016\)](#) found out that secondary education had a positive and significant effect on women labour participation.

Financial situation has a negative but statistically insignificant -0.372% as far as women decision to get into farm labour is concerned. The negative sign associated with this variable may shows that a rich farm is less likely to get into farm labour participation. Household size had a significant negative effect on women's farm labour participation. The study found out that the likelihood for women to take up farming activities reduces by 0.6601 when the household size lies between 1-10 persons. This finding differs from the expectation that household

size provides family labour that can increase farm labour participation, the understanding is that as families grow in size they indulge more into non-farm activities over time ([Nmadu and Akinola, 2015](#)).

Furthermore, women who have been into agriculture for at least 10 years increased the likelihood of women farm labour participation by 0.8922 at 5% level of significance. This is in line with the studies of [Julius et al., \(2025\)](#) who saw that farming experience significantly increased women's farm labour participation in Kenya. Crop production has demonstrated an insignificant coefficient 0.002 but positive effect on the likelihood of women farm labour participation. Land ownership has a positive and significant association at 5% level with a coefficient value of 1.018. In line with the findings of [Theophilus et al., \(2019\)](#) show that owning land increases the likelihood of women farm labour participation by 1.0175 at 5% level of significance. In this same light the size of land used may significantly increase the probability of women getting into farm labour participation. Access to credit showed a negative but insignificant effect on influencing women participation in farm labour with the coefficient value of -0.181.

1.4.4 Factors Affecting Women's Farm-Labour Participation by Agricultural Training.

Table.3 presents the results of determinants of women farm labour participation by agricultural training. Married female farmers reduced the propensity for women to participate in farm labour at an insignificant rate of 0.551 when they had agricultural training while those with no training rather increased the propensity at a significant rate. Married women with training might have fewer hours dedicated to farming due to household responsibilities. With training they might also have alternative income opportunities reducing their reliance on farming. Concerning education results are generally insignificant with a coefficient 0.389 when computed in terms of training. Financial situation is negatively associated with women farm labour participation with coefficient -0.941. This follows the reasoning that rich women farmers might tend to hire labour or employ mechanize farming that could reduce their farm labour participation.

Furthermore, household size showed that households that received training boosted the likelihood of women participation in farming at a significant level as opposed to those who did not receive training. Table.3 again reveals that those with high experience is statistically insignificant with a coefficient value of 1.286. In general, those

female farmers into crop production and who had training or not exhibited the potential to increase the probability of women participation in farm labour. However, a farmer into crop production and had training exhibited a higher influence ($2.808 > 0.578$) than its untrained counterparts. This may be because training can lead to better resource allocation making farming more attractive to women.

The results further showed that those who owned land and both received or did not receive agricultural training positively and significantly influences the likelihood of women farm labour participation with coefficient of 3.324 and 0.734 respectively. The impact is however higher from those who own land and had training. This may be because training equips women with the know-how to improve productivity and efficiency thereby involving them more into farming. The size of land put into use is insignificant in determining women farm labour participation from our results for women who have agricultural training with a coefficient of -0.052 while statistically are positively associated with participation with women with no training. Having access to credit with training positively and significantly may increase the probability of women farm labour participation with the coefficient value of 1.481 at 10% level and having access to credit with no agricultural training is statistically insignificant.

Table 3. Logistic Regression Estimates of Women Farm Labour Participation by Agricultural Training.

Variable	Agricultural Professional Training			No Agricultural Professional Training		
	Coef.	Std. Err.	Z	Coef.	Std. Err.	Z
Marital status (1=yes, 0 otherwise)	-0.551	0.776	-0.71	0.559*	0.279	2.00
Education (1=secondary, 0 otherwise)	-1.115	0.792	-1.41	0.389	0.305	1.28
Financial Situation (1=rich, 0 otherwise)	-0.498	0.814	-0.61	-0.941*	0.383	-2.46
Household Size (1=10 persons per house, 0 otherwise)	2.939***	0.804	3.65	-0.333	0.322	-1.03
Experience in Agriculture (1=5 to 10 years, 0 otherwise)	0.564	0.795	0.71	1.286**	0.414	3.11
Crop production (1=yes, 0 otherwise)	2.808**	0.990	2.84	0.578*	0.343	1.68
Own land (1=yes, 0 otherwise)	3.324***	0.928	3.58	0.734**	0.370	1.98
Land Use Size (1=2 to 4	0.799	0.401	0.744	0.822	0.383	0.600
Access to credit (1=yes, 0 otherwise)	1.482*	0.852	1.74	-0.224	0.362	-0.62
Constant	5.523***	1.374	4.02	-0.659	0.421	-1.56

Observation	117			281		
LR chi2(10)	40.42			40.06		
Prob > chi2	0.0000			0.0000		
Log likelihood	-39.158326			-159.73817		
Pseudo R2	0.3404			0.1114		

Source: Author (2026) Notes; *, **, ***, represent 10%, 5%, and 1% level of significance

1.5 Limitations of the Study

This study adopted a cross-sectional research design with the use of primary data collected through structured questionnaire and observations. Though this approach is appropriate in assessing the determinants of female labour farm participation at a point in time, this design presents some limitations. First, the cross-sectional nature of the study limits causal inference. The study establishes associations between women farm labour participation and factors such as age, education, training and gender in Mezam Division. However, it fails to establish causality due to the temporal ambiguity as both the outcome and explanatory variables were measured simultaneously. A longitudinal design would be required to establish cause and effect relationship.

Second, this study is prone to biases associated with primary data collection. Farm labour participation, farm training and farm size for example may not be accurately reported since farmers do not keep farm records and statistics. They mostly report from memory which may be faulty. Furthermore, delay in responses and limited accessibility to some interior farming areas due to poor roads and insecurity due to the prevailing socio-economic crisis in the North West Region may introduce sampling bias into the study. The fact that farming is a seasonal activity posed a limitation to the study owing the fact that data was collected at a spot in time without spreading across the various seasons to get the actual occurrences on the farm.

Finally, the use of primary data constrained the sample size due to financial and time constraints which may limit the generalizations of the findings beyond Mezam Division. Despite these limitations, strong measures such as pre-testing of research instrument, random sampling and observations were used to ensure and enhance the validity and reliability of findings.

1.6 Conclusion and Policy Implications

The findings reveal that professional training, marital status, land ownership, farm experience, and land size all have a significant and positive influence on the likelihood of women farm labour participation. Household size exhibits a significant and negative effect while education, crop production, financial status and access to credit were insignificant. When decomposed by professional training, household size, crop production, access to credit and land ownership are positive and significant in influencing the probability of women farm labour participation. These results highlight the important role human capital and resource access has on empowering women in agricultural activities. Farm experience further enhances farm involvement through practical knowledge. Large households reduce female farm involvement because of increased domestic chores that reduces time available for farm work.

The study's findings imply that targeted policy actions can boost female farm labour participation. Based on results, this study recommends expansion on women-focused professional training to build skills and confidence in women. Reformation of land laws that promote women's access and ownership of land is also highly recommended. The introduction of family-friendly measures like childcare and labour-saving initiatives is encouraged to leverage larger households lessening the burden on women. Overall, targeting interventions that address these determinants can promote women involvement in farming thereby improving household food production and boosting food supply.

REFERENCES

1. Badel, A., & Goyal, R. When will global gender gaps close? IMF Working Paper No. 2023/189. International Monetary Fund. (2023).
2. Che, G. N., & Sundjo, F. Determinants of female labour force participation in Cameroon. International Journal of Applied Economics, Finance and Accounting, 3 (2) (2018). 88-103.

3. FAO. The role of women in agriculture. Food and Agriculture Organization of the United Nations (2011).
4. FAO. Small farm holders in Cameroon. Food and Agriculture Organization of the United Nations (2015).
5. Forgha, N. G., & Mbella, M. E. The implication of female labour force participation on economic growth in Cameroon. *International Journal of Development and Economic Studies*. (2016).
6. Goldin, C. The U-shaped female labor force function in economic development and economic history. (1994).
7. Javaid, A., Rani, P., Sharma, S., & Kaur, A. Women's contribution to world food production. (2022).
8. Julius, M. O., Mairura, C., & Basweti, E. A. Determinants of women's participation in farming: A case study in Bomachoge Chache Subcounty, Kisii, Kenya (2025).
9. Khonje, M. G., Wongnaa, C. A., & Theophilus, A. Secondary education and women labour participation (2015).
10. Michelle, P. Women's empowerment and leadership opportunities in agriculture. (2017).
11. Nmadu, J. N., & Akinola, A. Farm labour supply and utilization for food crop production in Nigeria. In *Proceedings of INTCESS15-2nd International Conference on Education and Social Sciences*, Istanbul, Turkey (pp. 311–320) (2015, February).
12. Njuguna, J., Oyelana, A., & Yakubo, A. Y. Women's participation in farming compared to men (2015).
13. Oyelana, A., Njuguna, J., & Yakubo, A. Y. Women's role in farming compared to men (2017).
14. Theophilus, A., Wongnaa, C. A., & Khonje, M. G. Land ownership and women's farm labour participation (2019).
15. Wongnaa, C. A., Khonje, M. G., & Theophilus, A. Secondary education and women labour participation. (2016).
16. Nmadu, J. N., & Akinola, A. Farm labour supply and utilization for food crop production in Nigeria. In *Proceedings of the 2nd International Conference on Education and Social Sciences (INTCESS15)* (pp. 311–320) (2015).